What's new in GMI

October 11, 2006

- **Fast JX updates**
  - **– received from Michael, implemented by Jules, some problems need to be worked out at this meeting.**
  - **– new solar fluxes being used; good agreement with HALOE O_3**
- **Flux Diagnostics**
  - **– implemented and tested by Steve, used in all tropospheric runs and in Combo-GEOS4-DAS run**
- **Lots of new meteorological fields**
  - **– GEOS4-DAS July, 2000-Jan, 2002; GEOS4-DAS Feb, 2004-Dec 2005; 2x2.5 x 42 levels; *have been used in simulations***
  - **– GEOS4-Forecast July, 2004-June, 2006 – *processing/testing ongoing***
- **Combo Model run with GEOS4-DAS**
- **'Final' tropospheric runs**
  - **– 4x5, flux diagnostics on, GISS, DAO, and FVGCM**
- **Slow progress on coupled aerosol-chemistry model**
  - **– Need for a small working group on this at this meeting**

A note on met field processing….

GMAO 'Late Look' assimilation product consists of 24 files per day, totaling 130 GB/month.

- **It can take a few minutes per file to retrieve them (tape archive).**
- **The original resolution is 1^{o}x1.25^{o} x 55 levels.**

GMI processing includes regridding in the vertical and horizontal, selecting the 2D and 3D fields required for the CTM, then writing out new netCDF files.

- **Steve has written scripts to automate this process. Bhat runs several jobs in parallel to speed the processing.**
- **Quality control of output is critical. It is automated as much as possible but still takes some human judgment.**

The job of processing forecast fields is 10X bigger: 2 forecasts per day, each 5-days long.

A note on assimilated vs. forecast met fields….

- The 'new' GEOS4-DAS fields have 3-hr met updates and each update is a 3-hr AVERAGE (not instantaneous).

- Pawson et al., 2006, submitted, reported that a huge improvement in residual circulation comes from the use of 6-hr averages instead of instantaneous. Age of air shows this well.

- The new GEOS4-forecast met fields are instantaneous fields, saved every 6 hours (2 5-day forecast per day). Comparison of these met fields with the GEOS4-DAS 3-hr averages will not be 'apples with apples'.

- The GMAO has not yet produced a 6-hr average forecast product.